Revision number:1 Purchasing Agent: Debbie Gundersen

Item: COMBINATION LIQUID/GRANULAR APPLICATOR (SKID MOUNTED)

Vendor: 10965B
A G Truck Equipment
P O Box 27755
Salt Lake City UT 84127-0755

Internet Homepage:

Telephone: (801) 975-0400

Fax number: (801) 975-7567

Contact: John LeRoy

Email address:

Brand/trade name: Kois-Storm Buster Combo

Price:	See Attached Price List
Terms:	Net 30
Effective dates:	11/12/98 through 11/12/00
Days required for delivery:	60-75 Days ARO
Price guarantee period:	1 Year
Minimum order:	1 Unit
Min shipment without charges:	
Other conditions:	

REVISION #1: CONTRACT HAS BEEN EXTENDED THROUGH 11/12/00.

This contract covers only those items listed in the price schedule. It is the responsibility of the agency to ensure that other items purchased are invoiced separately. State agencies will place orders directly with the vendor (creating a PG in Finet) and make payments for the same on a PV referencing the original PG. Agencies will return to the vendor any invoice which reflects incorrect pricing.

Combination liquid/granular applicator, skid mounted storm buster combo 1300/6.5 delivered.
$31,485.00/ea.

GENERAL SPECIFICATIONS

The combination liquid anti-icing/deicing applicator is to be new units, 1998 or newer model. The equipment is to have all standard features. The equipment is to be delivered assembled, serviced, tested and ready to operate.

DETAIL SPECIFICATIONS

SKID: Unit will include the tank, pumping mechanism, and spray-bar, mounted on an integral skid. The skid will have provision for mounting in the bid of a standard dump body, including 3/8" transport (G70) chains with binders (no welding permitted). Or ratchet, nylon straps will be used to hold the assembly down.
The entire frame platform will be made of 304 stainless steel. The tanks will mount on a full framed structure that supports the V-box spreader and polyethylene tanks. The skid will be locked in place at the rear by using the tailgate latch. (1.5 pins)

The tank will be mounted on an independent cradle, 304 stainless steel which is mounted to a 304 stainless steel slip-in frame. The slip-in frame will be constructed of 2" x 4" 304 stainless steel tubing frame and 4" x 2" 304 stainless steel tubing for the front header and rear lifting eyes. There will be a minimum of four (4) lifting eyes to remove the tank and spreader from the truck and load to storage racks. The four lifting eyes will be constructed of 2" x 4" 304 stainless steel D-rings on the top of the tubing for lifting the unit from the dump body bed.

TANK: The tanks will be a minimum of 1300 gallons. Two (2) 500-gallon rectangular tanks mounted in front of the spreader and two (2) 150 gallon saddle tanks mounted on each side of the spreader. The tanks will be constructed of a linear polyethylene FDA approved resins. The tanks will be compatible with all de-icer materials currently available and carry a three (3) year manufacture's warranty.

The tanks will be interconnected from the bottom of the tanks forward to draw the complete amount of liquid without tilting the dump body.

The tow forward tanks will have a 9" inspection port. All the tanks will draw equally to the pump. Not creating any vacuum locks or venting problems when filling the tanks. The tanks will have a mechanical gauge with an electrical low level indicator light and alarm in the cab. The fill location will be at the rear of the unit and fill all four tanks simultaneously.

Products will be transferred form the tank by a hydraulically driven pump rated at 150 U.S. gallons/minute minimum. (No PVC pipe or couplers will be used anywhere in the system).
Exceptions: quick disconnects and valves-glass filled polyethylen.

The unit will be capable of self loading ad unloading the liquid products from the rear of the unit. There will be two indicator lights at the rear of the unit to indicate when the unit is almost and completely full. The yellow light will indicate that the unit is almost and completely full. The yellow light will indicate that the unit is within six (6) inches of being full from the top. The red will tell the operator to turn the pump load operations off when full. This will all be done from the rear of the unit at the fill station.

A fixed 8 foot spray bar will house nozzles to spray a 12-foot path from a single boom and up to a 36-foot path with two additional booms. The main spray boom will have 304 stainless steel spring loaded nozzles to eliminate any dripping when below 4 pounds of pressure. The side booms will consist of a single 304 stainless steel nozzle with a diffuser allowing spray pattern out

of and up to, not less than 12 feet to each side of the vehicle. The prewet system boom will have a spray pattern with four (4) variable orifice nozzles covering the aggregate as it is discharged to the sander chute.

To have a 2 - ½" minimum diameter steel load line with a shut off - off valve and quick disconnect fitting provided. The load line will enter through the rear of the tank and extend upward to an anti-siphon dome inside the tanks.

The tank outlet will consist of a 3" minimum diameter outlet, with an easy clean out suction strainer between the tank outlet and the pump inlet.
Exception: 2" in lieu of 3"

The control console will be installed locally. The control console will retrofit to existing hydraulics for the operations of sand and liquid applications. It is the responsibility of the successful bidder to make arrangements to have the Combination Aggregate/Liquid Applicator installed and tested before delivery.

CONTROLS: Consoles will have a built in ground sped simulator. To provide any test simulation when the vehicle is in the shop and not moving. This is to provide a trouble shooting guide.

The system will have the capability to apply products through the range of 10 to 160 gallons at speeds from 05 to 50 MPH.

CONTROL CONSOLE: Operator controls will include:

- **S** Power on/off switch
- **S** Spray bar on/off switch
- **S** 12' main-bar select switch
- **S** 12' left wing select switch
- **S** 12' right wing select switch
- **S** An application rate adjustment switch
- **S** Self-illuminated display
- **S** An application rate in gal/mile

Control console will have enough memory capable of recording the following information and display as current run totals and seasonal totals.

- **S** Miles, tons, gallons spread in automatic mode.
- **S** Miles, tons, gallons spread within blast mode.
- **S** Total miles, tons, gallons spread in automatic control mode.
- **S** Total miles driven while not in automatic spreading mode.
- **S** Granular tons spread which were prewetted.
- **S** Granular tons spread without being prewetted.
- **S** Liquid gallons sprayed during prewetting and anti-icing application.
- **S** Real time spent spreading granular, spraying liquid and use of blast button.

Control console will also record system information which includes the following:

- **S** Time and date event recording of truck was started and fumed off, type of materials spread and applications rates that were selected by the operator.
- **S** Time and date event recording of when control system was operating in an error condition (application error, manual override, loss of feedback sensor).
- **S** Time and date event recording of vehicle maximum speed alarm set point exceeded, maximum speed vehicle achieved and when vehicle travel speed went below alarm set point.

S Time and date event recording of when control was in automatic mode of control versus off as well as when blast function was activated.

The controls will be used in a combination aggregrate/liquid operation but have the capability to remove the combination Applicator and install a Salt/Sander Pre-wetting spreader and use the same controls for the spreader.

Tho control of this path will be done by a minimum of three (3) independent spray booms covering up to 36' with three booms open and operating. All booms may be open at one time allowing the operations of up to three lanes and 160 gallons per lane mile.

The booms of the spray bars must be able to fold up and out of the way for loading and unloading the body from the dump body and storage of the unit. When the spray bar is folded up or down the hoses connecting to the control valves will be reconnected quickly by design.

Nozzles will maintain an accurate, non-atomized distribution throughout the range of application rates and travel speeds.

All of the liquid in the tanks will be used when units are on a 7 degree grade up or down.

SPREADER: The size of the V-Box combined with liquid tanks will have a capacity of a minimum of 1300 gallons and fit a standard 14-foot dump body of 84" inches wide. The V-Box will hold a minimum of 6.5 cubic yards of aggregate struck.

Construction will be 12 gauge hi-grade 30 stainless steel with a double crimped top edge forming a 2" section for greater rigidity. The hopper length will be not less than 8' with two feet of longitudinal overhung for supporting the spinner assembly. The hopper shall not be more than 84" outside width with the overall height approximately 60" to achieve 6.5 cubic yards.

The body sides must have not less than a 45-degree pitch. The body longitudinal will be formed 10 gauge 304 stainless steel. The cross channel will be formed 10 gauge 304 stainless steel that ties the lower edge of the longitudinal to each support. A 6" x 9.0 lb. flange carbon steel “H” beam will be elevated 3" approximately above the top edge of the hopper, thus providing a longitudinal brace and hinge point for the top screens. There will be a 2" x 2" angle iron welded from the H beam to each side for additional side support.

The body and convey or longitudinal will be electrically welded into a rugged solid unit. A screw type jack will be self-locking. A 12" x 18" 10 gauge 304 stainless steel feedgate and ruler will be provided at the rear of the hopper to allow for accurate discharge. There will be a 12-gauge 304 stainless steel formed side supports that extend the full side angle height spaced on approximately 2' centers.

CONVEYOR: The conveyor system will be of the chain bar flight running longitudinally with the body feeding material to the feedgate opening. The overall conveyor width will be not less than 24". To protect the chain link strands, the top edge of the longitudinales will be formed down over the strands exposing only the drag bar to the material. The conveyor floor will be of flat design and manufactured to replaceable 3/16" carbon steel and roll over edges. The conveyor floor will be supported on 12 gauge 304 stainless cross angles spaced approximately 2" apart.

A heavy duty idler adjustment assembly will provide approximately 3" of adjustment for proper conveyor chain conveyor chain tension. The adjustment of the chain idler will be

made at the rear of the spreader near the chute. The idler adjustment will run from the rear to the front idler adjustment. Adjustments will be made without removing the liquid saddle tank.

CHAIN: The conveyor chain will be heat treated, 2.25" pitch self-cleaning pintle type with 7/16" pins and a tensile strength of 21,000 pounds. The chain will utilize a .25" x 1.5" and a 18.75" crossbar welded on both the top and the bottom to every other chain link making an overall with of twenty-two (22) inches. The crossbar will be positioned on approximately 4.5" centers.

SPINNER: The spinner disc will be 18" minimum in diameter of Assembly abrasive resistant steel and have six form fins. The disc will be mounted on a cast iron replaceable hub connected directly to the hydraulic motor. The material will be guided from the conveyor on the spinner disc by means of adjustable 10 gauge stainless steel deflector. The deflector will control the spread pattern form left to right by controlling where the material drops on the spinner. The entire spinner chute assembly will be manufactured of 304 stainless steel wear resistant material and adjustable in height. To have four (4) spinner baffles, one front fixed and two sides and one rear adjustable without the need of tools.

POWER: The convey or chain will be driven through the worm drive gear box by a low speed, high-torque “orbital types” hydraulic motor. The motor will be directly coupled to the gear box. The spinner disc will be driven by an independent low speed high-torque “orbital type” hydraulic motor. This motor will be directly coupled to the spinner hub eliminating any extra extension shaft or bearings. (Or approved equal).

TOP: The top screens will be constructed of 3/8", steel rods welded to form a 2.5", square mesh which is framed by a combination of .25" x 1" flat bar and 2" angle iron with the edge supports reinforced by .25" x 1" flat bar. Top screens will be removable and use the “slide and lock” type hinge. Screens utilizing hardware that may vibrate loose are unacceptable.

PAINT: All stainless steel metal will be left unpainted. Carbon steel components will be chemically cleaned or sandblasted. Powder coat or enamel painted accepted in accordance with paint manufacture specifications.

Option: Carbon steel unit instead on stainless steel.
Option Price: $5,000.00

The units will be complete and ready for operation when delivered. A minimum of one day of training will be provided with the units when delivered.

DELIVERY: Delivery must include the following:

- **S** dealer’s invoice
- **S** a copy of warranty
- **S** an operator’s manual for each unit
- **S** four complete sets of manuals including:
  Parts list, repair manual, an operator’s manual

Cost of these manuals is to be included in bid price.

REPORTS: The contractor will submit yearly reports to the State Purchasing Agent (Debbie Gundersen) showing quantities and dollar volume of purchases by each agency and political subdivision. This report will be due by 11/5/99.

FINET COMMODITY CODE(S): **FOR AGENCY USE ONLY**

76566000000 - SPREADERS, TRUCK MOUNTED (FOR AGGREGATES, ICE CONTROL MATERIALS, SEAL COATINGS, ETC.)